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"Eugenics is the study of agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally."

OBJECTS.

I.—Persistently to set forth the National Importance of Eugenics in order to modify public opinion, and create a sense of responsibility in the respect of bringing all matters pertaining to human parenthood under the domination of Eugenic ideals.

II.—To spread a knowledge of the Laws of Heredity so far as they are surely known, and so far as that knowledge may affect the improvement of the race.

III.—To further Eugenic Teaching, at home, in the schools, and elsewhere.

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NOTES AND COMMENTS.

Compulsory Military Service.—The question of compulsory service has been much discussed lately, though strong demands have been made for silence in regard to this topic on the ground that the nation should be willing to follow any lead which the Government may give. There can, however, be no objection to discussing the abstract eugenic questions involved, more especially as but very little attention is likely to be paid to them! The terribly dysgenic effects of modern warfare have been so frequently insisted on in these pages that this view need not here be further emphasised; and, as this evil consists in the killing off of a selected class of the community, it is obviously at its worst where a voluntary military system prevails. Eugenists regard the moral qualities of mankind as those which it is most necessary to promote; and, in these qualities especially, the volunteer is likely to excel. Though in such a desperate struggle as this in which we are now engaged we must send forth our best fighters, yet let us fully recognise the racial harm which is being done.

If compulsory service should be introduced many practical questions will arise as to the methods of its enforcement, especially in regard to the age and to the status of the conscript. Considerations of justice and of finance will be involved, about which nothing will here be said. But the eugenist is bound to consider which method will put the least effective check on the reproduction of the more fit. Which is the more likely to add to the population on his return from the war—the married man who may already have a family, or the unmarried and perhaps never to be married man? Comparing in each case men of the same age and social class, the young married man will probably be more valuable in rebuilding the nation than the bachelor, though the opposite may be true in the case of older men.

Then as to fitness, married men are likely to be on the average somewhat superior unless female selection counts for nothing; though young bachelors may claim superiority on the ground that they have as yet refrained from marriage for prudential reasons. Thus, on purely eugenic grounds, the conscripts should be as old as possible, though whether married or not is disputable. Practically all that can be said is that the selection of the conscripts should be made impartially in each district amongst all who are regarded as being of the military age.

Broken Soldiers.—A particularly malignant falsehood is being propagated in the name of "pacifism" to the effect that the wounds and nervous shock inflicted upon soldiers by the experiences of war constitute an injury to the racial qualities. If this were merely an example of disinterested error we should be obliged to protest most forcibly against the propagation of views for which there is no scientific justification. When we think, however, of the injury which the mortality of war is doing to the race, and of the inevitable increase under our voluntary system of the proportion of deliberate shirkers, it is apparent that our chief hope of repairing the racial injury, and of restoring the noble qualities of the gallant men who are dead, lies in the more rapid reproduction of all those, wounded and unwounded, who are left living. Of this the promoters of the movement are, no doubt, well aware; yet so deep and bitter is their hatred of the men who excel in war that they would brand the broken and the wounded with the taint of racial inferiority, and do their best to dissuade people ignorant of the facts, especially women, that the broken soldier is not a desirable father. Compared to their racial worth, the odds are already far too heavy against such men. Often unable to earn a living, often even so crippled as to require personal attendance, their small pensions do not serve to make them attractive husbands. Let it at least be firmly understood by the noble women who choose to espouse these men that the injuries of war last but for one generation, and that their children will receive, as a natural dower, a constitution unimpaired, and the power to become all that their father might have been. Their father's courage may grow again in a new and uninjured body.

Work and Maternity.—An article in the Neapolitan journal, *L'Anomalo,* for August-September, 1914, summarises some very interesting statistics bearing on the influence which the industrial occupation of women exercises on the health and vitality of their offspring. The statistics have been compiled from the clinical records of the Obstetrical Institute of the Royal University of Turin by the Director of the Institute, Professor Vicarelli, and refer to a series of 4,408 infants born at full term and of healthy mothers. The following table shows the average weight and length at birth of these children when grouped according to the mothers' occupations:—

	Occupation.	No. of children.	Average weight. (grammes.)	Length. (cm.)
	Married (home duties only)	957	3127.1	49.84
	Domestic service	757	3063.5	50.12
Engaged in	Agriculture	1,033	3114.8	50.36
	Mineral and metal industries	10	2961.0	48.40
	Chemical industries ...	18	2922.7	49.72
	Paper and printing ...	40	2927.2	49.20
	Textile industry ...	703	3007.4	49.95
	Rag sorters, etc. ...	770	3050.2	49.92
	Provision industries ...	88	3034.2	49.94
	Tobacco industry ...	29	3195.5	50.41

Taking the series as a whole, the average weight at birth was found to be 3,075 grammes, and the average length 50.04 centimetres. The corresponding figures 25 years ago, as shown in the records of the same Institute, were: average weight, 3,400 to 3,700 grammes, and average length 53.54 cm. This striking difference is attributed by Professor Vicarelli to the influence of the industrialism which has so profoundly modified the bio-social conditions in the towns of Northern Italy within the last few decades. As a further evidence of the extent to which the physical deficiency of the children is due to the mothers' modes of life, a comparison was made between the children born within three weeks of the mothers' admission to hospital, and those born when the mothers had had the advantages of rest and good food for longer periods up to seven

weeks. It was then found that the children in the former group had an average weight of 3054.8 grammes, while those whose mothers had been several weeks in the hospital before confinement had an average weight at birth of 3125.7 grammes and an average length of 50.34 cm. W.C. S.

Racial Repair.—The nation can now no longer overlook the racial injury which the war has already inflicted, and which it will still more inflict in the future; and the Government cannot fail to perceive that the chief work in the restoration of our nation's strength must be devoted to racial repair. A great body of men, selected out of every part of the nation for the three precious gifts, of health, courage and patriotism, have been subjected to an excessive mortality, and in addition, as the fall in the birth-rate shows, have been withdrawn from their share in reproduction. This selected body of men will, unless there is an organised effort to counterbalance the loss, have a smaller number of descendents, to represent their fine qualities in future generations. This is an injury which no nation can support. The men of our armies possess the very qualities by which defeat and ruin are averted. If we allow this war to inflict a permanent weakness upon our nation not only will the next war be more severe and more precarious, but it will also come sooner. There can be but one end to a nation which rises from each war less able to fight the next. Victory brings power and wealth, but if it also brings weakness the end is doubly hastened.

When we realise that the effects of war are not only painful but, in modern conditions, harmful—that war is not merely a trial but an injury—we should do well to avoid all superficial talk about "militarism" and "pacifism," and to give our thoughts to devising practical means of minimising the evil. We are faced with two problems. How can wars be made less frequent? How can they be made less dysgenic? The first is simply a question of foreign policy. Eugenists cannot speak upon it more definitely than any other class of citizens. We rely upon the general experience of the past in suggesting that that nation will suffer fewest wars which is so strong that it cannot be despised, if it be so just that it cannot be suspected. Our policy must be to maintain the standard of national strength

and of national honour, so that we may preserve the confidence of our friends and the respect of our enemies. This much is so self-evident that it must be considered to be the aim of all sane politicians.

Let us suppose that all that is possible has been done to render wars less frequent. It remains to be seen what should be done to render them less harmfully selective. Compulsory service, as has been pointed out above, will reduce the stringency of selection by drawing upon wider resources. A conscript country suffers in war from a harmful selection of physical characters; the medically unfit are necessarily rejected. The standard of physical fitness will, apart from any counteracting measures, decline as a result of the war. A country, on the other hand, which still indulges in the luxury of a voluntary army, will suffer from a dysgenic selection not only of physical health, but of courage also and patriotism; a war will injure not its physique only, but its moral backbone.

But apart from all efforts to mitigate the racial cost of the war, is it not possible that we should pay for it so to speak out of income. Victory in the Napoleonic wars brought to this country abounding prosperity, and unexampled freedom to shape the course of its national destiny. Victory in the present war will yield the same fruit, in liberty to pursue unhindered our own ideals. Such liberty may be used or wasted. It will be used if our nation is so organised in time of peace as to replace the men who have died in war by children of their own stock, bearing their own virile qualities. By so doing we shall save up, in time of peace, for the inevitable expense of war. Our liberty will be a worthless boon if, as during the last century, our race impoverishes itself in time of peace, wasting its strength instead of hoarding it.

Let us take an extreme and clear cut example, in order to show that the complete repair of the injuries of the war is possible, without any extraordinary efforts, within a few generations. Consider a nation made up of two classes, keeping strictly apart, soldiers whose sons becomes soldiers, and whose daughters marry soldiers, and civilians, worthless for military purposes, who are fit to perform certain civil duties in return

for having their lives and liberties protected. In war the soldier population from 18 years upwards, endures a greatly increased death-rate. A single, short and violent war might destroy half the men engaged, say one-quarter of the males, or one-eighth of the soldier population. After the war the number of soldier losses would rise from half to seven-eighths of its original value, but for simplicity let us take the lower value, and consider the far more severe case, in which half of all the soldier families, men, women and children are destroyed; this is to some extent equivalent to the effect of a long and severe war. To what extent would the rate of reproduction among soldiers have to be increased in order to repair such a loss in three generations? If the soldiers reproduced their kind more rapidly than the civilians, and maintained the more rapid rate of increase over the whole term of peace, relatively small difference in the rates of reproduction would be sufficient. If a soldier left five children to a civilian's four, in three generations the ratio would be 125 : 64, and practically the whole of the damage would be repaired.

When we turn from this artificial example to the facts presented by this country, it is clear that the same conclusion may be drawn as to the need of a slight and steady increase in the fertility of those strains and types which have borne the brunt of the fighting. The problem is to know where to look for these same types in time of peace. In a few instances, however, one course is clear. First, there are those who have won distinctions and military honours; who have proved their quality in action. Is it too much to hope that these men will receive every encouragement after they have served their country in war, to serve her even more in peace by marrying and having larger families. The present scale of pensions is low, and many of these men will not be able to earn a living, it would be only a slight recognition of the most valuable service that they can give, if their pensions were increased substantially for every child. It is desirable that such men should be better off rather than worse for each additional child which they beget. It is to be noted that at the present time recipients of the Victoria Cross receive, unless they are officers, an annuity of £10 a year,

which is increased to £50 in the event of old age or illness preventing them from earning a living. It is the plainest common sense that the additional pension should be granted if it may be the means of bringing into the world children of heroic parentage.

The gravest consideration should also be given to the devising of means by which the officers of the Navy and Army, a highly-selected and desirable class of men, should be permitted to marry more easily than is at present possible. The conditions of life, in foreign lands, and in frequent danger, are alone a sufficient hindrance; an immeasurable injury is being done to the race, and to our chances of success in future wars by the fact that officers cannot afford, on their pay, to marry young. The shortage of army officers was a problem before the war broke out, as was their extraordinarily low birth-rate. Magnificently as the Universities have come forward to fill the commissioned ranks, it cannot be doubted that the quality of our new armies would have been higher had the old military families possessed not finer, but more, lives to offer. The same problem must be faced among the non-commissioned officers and men. The army system of allowing certain men to marry on the strength offers a splendid opportunity for Eugenic selection. Full use could only be made of it, if it were possible to allow the best soldiers, to an extent of more than five per cent., the privilege of marrying on the strength. Is it after all impossible that in order to rebuild our future armies this privilege might be extended, especially as to do so would greatly tend to reduce the misery caused by marriage off the strength? R. A. F.

Ethnology and the War.—M. Mahondeau opens an interesting topic in Le Revue Anthropologique, with the inquiry "La cruauté allemande est-elle ethnique?" Although the origin of German barbarism is at the moment of less importance than the means to its suppression, it is not a little interesting to set aside all national prejudice, and to examine to what extent this war is a war of races. It is especially desirable to do so since there is a popular fallacy, borrowed from the French, that the Germans are typically of the Nordic race. Naturally one does not expect to find any modern nation racially pure. The

extensive area of modern states, together with great facilities for communication, put that out of the question. All of the great races of Europe will be represented in all of the belligerent countries. This does not say that the basic causes of the war are not racial. The basic needs of a race might be expressed by the policy of a nation, of however mixed blood, in which it exerted a predominant influence. To say that we are dealing with a conflict of ideals and civilisations does not affect the issue. Ideals themselves are the outcome of the racial nature, and only those will be accepted which are in harmony with the innate constitution of the race. We should ask in what proportion are the different races mixed, in order to judge of their influence, either exerted through political power, or through what is, in Germany as elsewhere, the far more powerful mass action of public opinion.

At present ethnography cannot present an assured analysis of the European nations into the innumerable sub-races, which they no doubt contain; but we may form a very fair general idea of the distribution of the three great races of Europe—the Nordic, the Mediterranean, and the Alpine races. The Nordic race, characterised by its great stature, blond colour and long head, is prevalent in Scandinavia, including Denmark, the British Isles, and exists to some extent in Holland, Prussia and North Russia; their magnificent qualities as soldiers and sailors have enabled them to impose themselves as rulers of other races. It is to the prevalence of Nordic blood that we may ascribe the magnificent quality which English soldiers have always displayed, the strong British taste for sport and the adventurous spirit which laid the foundation of the British Empire. That Great Britain contains more of Nietzsche's "blond beast" than does the German Empire may be seen by comparing stature—the German is short and thick-set compared to the Englishman, their caricatures show as abnormally long and lean—or head form—the German head is markedly shorter and squarer than the English—or the distribution of fat—among the people of these islands, who are addicted to exercises, fat is, as a rule, well distributed over the limbs and body, and not concentrated in unsightly masses on the face and the abdomen. The fact is

that the English are man for man a more military nation than the Germans, and "German cruelty" is the best possible evidence of this fact. Cruelty is not due to a superfluity of courage, as those whose chief aim is to depreciate the military virtues would have us believe; it is the child of cowardice and can only manifest itself when the unnatural situation occurs, in which a nation, to whom the honourable traditions of mastery are unknown, finds itself master by force. In the Belgian atrocities there is something reminiscent of some frenzied triumph of oriental slaves, which may remind us that it may well be that the Prussians are distinguished from the South Germans, chiefly by an infusion from Finland, of the Ugrian stock, from which the Turks also are derived. But although such a racial affinity with the Turks is probable enough, it is not necessary to explain the unbalanced license of the German army. The Alpine race are probably the most educable and receptive of Europeans, and if military policy demands brutality no better instrument could be found than the obstinate fidelity of the German middle classes. There is something of the impersonal coldness of the official in these Belgian murders. Those who committed them seemed to consider themselves merely as instruments, and to have been content so long as they proved themselves efficient instruments. Of the Mediterranean race, which, if we pay respect to skull-forms, is far more nearly related to the Nordic than to the Alpine, there would seem to be little trace in Germany . Though short brunets are common, they betray by the shortness of their heads and the heaviness of build their "Alpine" origin. The slender, quick, witty, intelligent race of the Mediterranean, which still extends up the west coast of Europe—both they and the Nords are well represented in Ireland—seem to have been driven almost entirely out of central Europe, although according to Sergi they occupied the whole territory, including Switzerland, Germany, and Russia, in the neolithic period. It seems to have been the invention of bronze weapons, instead of stone, which enabled the broad-heads, characteristically enough, to make their great inroad from Asia.

R. A. F.

OFFICIAL PUBLICATIONS.

NORTHAMPTON COUNTY COUNCIL EDUCATION COMMITTEE. SEVENTH ANNUAL REPORT ON THE MEDICAL INSPECTION OF CHILDREN IN SCHOOLS FOR THE YEAR 1914.

UNDER the head "Heights and Weights" it is shown that, in respect of heights, the girls at the same ages were almost wholly taller in the rural than in the urban districts, and that the same held good for boys, except between the ages of seven and ten. In respect of weights, the girls were, except between six and seven years of age, heavier in the rural than in the urban districts, while the boys were rather heavier in the urban districts between the ages of five and ten years than in the rural districts. Rather less than one-third of the total children examined (4,846) had sound teeth, and the proportion of excessive decay indicates need for systematic remedial measures. "Mental Condition": Out of a total of 2,606 boys and girls leaving school, 96.70 per cent. were normal, 3.04 dull or backward, and 0.26 mentally defective.

REPORT TO THE LOCAL GOVERNMENT BOARD UPON THE PREVALENCE OF CONGENITAL SYPHILIS AMONG THE NEWLY-BORN OF THE EAST END OF LONDON. By Paul Fildes, M.B., B.C. (Cantab.), Assistant Bacteriologist to the London Hospital.

The object of Dr. Fildes' investigation was to determine the incidence of syphilis in infants as the result of a congenital infection. For this purpose it was arranged to perform the Wassermann test upon a random sample of 1,000 infants at birth, and again upon the same infants and their mothers at a certain period after birth. The investigation was carried out on the assumption that if an infant, when born, is infected with syphilis, it will respond to the infection by the development of the diagnostic serum reaction, even though it may show at the time no manifestations capable of detection by careful physical examination. It might be expected that an infant, the subject of congenital syphilis, would develop a positive reaction in, at most, two months after birth, and therefore in this investigation the Wassermann test was made both at birth and also between two and a half and four months after birth. By this means it was judged that all infants congenitally infected would be detected. The scheme of the investigation was to perform Wassermann reactions upon 1,000 babies through the medium of the blood taken from the umbilical cord at birth, and subsequently (two and a half to four months after birth) to test the babies themselves and their mothers; difficulty was experienced in inducing the mothers to bring their babies later, so that of 1,015 cases of blood taken from the umbilical cord, only 660 presented themselves for the further test. Of the 1,015 tests performed on the blood from the umbilical cord, 14 were found to give a positive reaction, 1.3 per cent., and of the 660 infants tested, three gave positive reactions, 0.45 per cent. The Wassermann test was performed on the mother when she brought her child for examination two and a half to four months after birth. In every case in which a positive result was obtained in the child, the mother also gave a positive reaction. This result supports the view now generally held: that any woman who gives birth to a syphilitic child must herself be syphilitic. (This brings us back to the subject of the alleged escape of the mother, which was in discussion in the year 1854, a theory which from clinical experience was then almost universally condemned, and which has certainly of recent years never been seriously maintained.) Dr. Fildes concludes that the great majority of cases of congenital syphilis will develop a positive Wassermann reaction in two and a half to four months after birth, and therefore did not

deem it necessary to prolong the observations further. He considers that the population examined was probably representative of the respectable labouring classes of London. In this population only one baby in 1,015 showed symptoms of syphilis at birth; only three babies in 660 developed syphilis, as evidenced by a positive Wassermann reaction during the period of observation, and of these only one showed symptoms of the disease. Twenty-seven (3.9 per 100) of the women examined gave a positive Wassermann reaction, but only four of these transmitted syphilis. The Wassermann reaction obtained with blood from the placental end of the umbilical cord is not diagnostic of syphilis in the infant, but of syphilis in the mother. However, only a minority of syphilitic women induce this positive reaction in the umbilical cord serum, and only a minority of syphilitic children give this reaction at birth. Dr. Fildes' general conclusion is that the ravages caused by congenital syphilis in infants are sometimes exaggerated. This comforting conclusion does not coincide with the experience of others who have made investigations on this subject. For instance, Dr. Carl Browning quotes the following figures :—

Result of Wassermann reaction in 364 selected cases attending the Dispensary of the Royal Hospital for Sick Children, and the Central Dispensary, Glasgow.

Number of negative cases	351
Number of positive cases	13
Number of families to which the cases belonged	337
Families yielding only negative reactions	330
Families yielding positive reactions	7
Percentage of positive cases	3.5
Percentage of families with positively reacting members	2.0

The tendency nowadays is to rely solely on laboratory investigation, and to relegate to the background the clinical experience of competent observers both in the past and in the present. The assumption that congenital infection might be excluded unless the Wassermann reaction was positive within four months after birth is a purely empirical one; in the present state of our knowledge, the Wassermann test is by no means infallible, and has many limitations from the point of view of diagnosis. We know that treatment by Salvarsan and its substitutes, and also mercurial treatment will cause a negative reaction in the syphilitic subject, but all clinicians recognise that this negative reaction may be merely temporary, and that it does not imply that the patient is free from his infection. Congenital syphilis in the form of "syphilis hereditaria tardiva" may not manifest itself until the 20th or 25th year, and it is quite impossible to say what the Wassermann reaction would disclose during this long period of latency. It would be a grave error in eugenics to underestimate the ravages of congenital syphilis and the damage it may inflict on future generations, and it would be well not to place absolute reliance on laboratory experiments, but to pay more regard to the experience of those who have to deal with the patients in the flesh in hospital wards or out-patient departments, rather than to those who study the blood reactions in pathological laboratories.

PERIODICAL LITERATURE.

ENGLISH.

JOURNAL OF GENETICS, July, 1915. *Hereditary Syndactylism and Polydactylism.* By J. S. Manson. An account of five generations of a Welsh family, many of the members of which are web-fingered and six-toed. The defect is only transmitted through affected parents, and thus resembles a Mendelian dominant. The founder of the family, whose ten children were all affected, seems to have been a pure dominant; the other affected matings give 40 children, of whom 18 are affected and four doubtful. The nature of that defect is, however, irregular, many of the family being only affected on one side.

Further Experiments on the Inheritance of Coat Colour in Rabbits. By R. C. Punnett. An attempt to elucidate the inheritance in rabbits of the colour group—

black	tortoise
agouti	yellow

and the parallel group—

chocolate	orange
cinnamon	dilute cinnamon

by means of the presence or absence of three factors, of which two are completely coupled. The paper is interesting in containing a comparison between the theory of coupling and that of multiple allelomorphism. No crucial method of discrimination is suggested, and Professor Punnett opposes the latter theory by means of the analogy of the silkworm.

On the Genetics of Rogues among Culinary Peas. By W. Bateson and Caroline Pellew. Experiments conducted with three varieties of garden pea—Ne Plus Ultra, Early Giant and Duke of Albany. The results are entirely unlike anything to be expected in Mendelian inheritance, and are summarised as follows:—

(*a*) Thoroughly typical plants do occasionally throw rogues, and certain intermediate forms.

(*b*) The rogues of whatever origin, when fertile, have offspring exclusively rogues.

(*c*) Intermediates (raised from types) showing combinations of type and rogue characters, give mixed families of various compositions.

(*d*) Crosses between types and rogues, however made, have, with rare exceptions, always given rogues; and these rogues have always given only rogues.

Heredity of Types of Inflorescences and Fruits in Tomato. By M. B. Crane. An interesting account of the types obtained by crossing the varieties Wonder of Italy and Lister's Prolific. In both the type of inflorescence and the shape of the fruit an approximation to the simple Mendelian ratios is found, and there is a suggestion of coupling between the two pairs of qualities. The paper is accompanied by 19 excellent photographs.

JOURNAL OF THE ROYAL STATISTICAL SOCIETY, May, 1915. Vol. lxxviii., Pt. 3. *On the Progress of Friendly Societies and Other Provident Institutions during the Ten Years* 1904-1914. By Sir Edward Brabrook, C.B. Pp. 414-445. The author remarks that the great event of the decade has been the creation by the side of the voluntary organisations of a momentous compulsory system, but the time has not yet arrived when any sound judgment can be formed on the ultimate effect of this new departure. He states, briefly, the direct changes in the position of the voluntary friendly societies effected by the National Insurance Act, 1911.

The variation in the amount of sickness claims made upon societies continues to be very great, but on the general average of 282 societies, the divergencies tend to neutralise each other, the total cost of sick pay being £297,525, or only 3 per cent. more than the expected amount. Statistics are given in respect of workmen's compensation schemes, trade unions, building societies, industrial and provident societies, loan societies, railway savings banks, trustee savings banks, and the Post Office Savings Bank. The funds of provident institutions generally have increased at the rate of £13,271,705 a year. In the case of friendly and co-operative societies and trustee savings banks the increase is greater than in the previous decennium. The total funds of the several classes of institutions enumerated above on December 31st, 1913, amounted to £510,909,176.

Note on the Future Population of the Self-Governing Portion of the British Empire. By E. C. Snow, M.A., D.Sc. In the March number of the *Journal* the writer gave diagrams indicating that, in the case of England and Wales, fairly reliable estimates of the future population in a particular age-group can, for most groups, be made by tracing the cohort from a previous census when it was in a younger age-group. In the present paper he gives in tabular form the actual estimates, 1911-1931. Table I. gives populations in age-groups for the aggregate of the United Kingdom, Canada, Australia and New Zealand for 1901 and 1911, with estimates for 1921 and 1931 (000's omitted). Table II. indicates the proportion (per cent.) of the population in the age-groups to the corresponding total population. Table III. states the rates of increase in each group between censuses to the nearest unit. The author remarks that the features worthy of comment in these tables are:—The increase in the population of the aggregate is estimated to be at a progressively lower rate from census to census. As compared with the actual increase of 12 per cent. between 1901 and 1911, the increase, if the author's estimate is correct, will go down to 9 per cent. between 1921 and 1931. The rate of increase will be very much greater for ages over 45 than for younger ages—between 1911 and 1931 the corresponding rates of increase are 44 per cent. and 15 per cent. respectively. The proportion of females to males at all ages is estimated to decrease, the figures for 1921 being 101.9 and for 1931, 101.6. This relative increase of males is most marked at young ages. The author remarks that it is quite impossible at present to make any allowance for the effect of the War or for any boom in immigration from countries outside the Empire that may occur.

REVIEW OF REVIEWS, June, 1915. Vol. li., No. 306. *Truth about War Babies.* By John Marchant (Hon. Secretary, National Birth-Rate Commission). Pp. 467-469. The author remarks that illegitimacy is an almost constant factor in the vital statistics of all countries. For each 100,000 of the population a ten year average of illegitimate births shows 95 in London, 332 in Berlin, 467 in Paris. In the county boroughs of England and Wales out of 295,916 births 12,672 are illegitimate; in the rural districts, out of 174,492 births 8,214 are illegitimate. Quoting the ratio of illegitimacy in the different Metropolitan districts, the author remarks that the figures have a distinct bearing on the present alarmist outcry, for they prove that neither the ignorance nor the poverty of the district tend to illegitimacy, the number of such births per thousand over a period of 10 years being in St. Marylebone 179.5, Strand 62, Westminster 53, Whitechapel 24, Mile End Town 16, St. George's-in-the-East 18, Stepney 10. The author expresses the opinion that, if the proportions were ascertainable, the civil population supplies almost as many cases as the Army and Navy. It is obvious, he remarks, that it is impossible to distinguish between illegitimate children during the War. It would be better for the nation to be prepared to provide for all those who are born under present conditions than to attempt to dis-

criminate between the children of soldiers and sailors and those of the civil population. The author states that he has taken pains to inquire carefully in several centres where large bodies of troops have been quartered, and in every instance he is convinced that the evil has been grossly exaggerated. Referring to the disadvantages of illegitimacy, the author shows that the death-rate among children so born is abnormally high. The prevalence of common infectious diseases—tuberculosis, diarrhœa and enteritis—is almost twice as great amongst the illegitimate.

UNITED EMPIRE, September, 1915. Vol. vi. (New Series), No. 9. *War and Law.* D. H. Montray Read. Pp. 655-665. The author discusses the validity and effect of international legislation under present conditions; and the influence exercised by Religion, Ethics and Nature. When chaos arrives the influence of the two former is practically eliminated. Natural laws alone become binding, for Nature can coerce where man's potencies fail. Does savagery pay in war? History says emphatically that in the long run it does not. The power that ceases to exercise restraint in the method of warfare, that has regard neither for law nor custom, has always met sure and swift disaster. Tyranny does not make power, but success may breed the tyrant. In May, 1415, before undertaking the seige of Harfleur Henry V. issued as a "Proclamation" the "Statutes and Ordenances . . . . made at trety and counseill of Maunt." These expressly forbid desecration or robbery of "Holy Churche; killing or making prisoners of women, unarmed priests, or children under fourteen." The writer gives several instances of the etiquette of war from mediæval times. Quoting from Harte's *History of Gustavus Adolphus*, the writer remarks that the words of this monarch are as grave an indictment of Teutonic methods, then as now. In an impassioned speech to the German officers in his army he spoke of "the ravages, extortions and cruelties lately committed . . . . and that . . . . persons of rank, birth, education and competent incomes have been guilty . . . . This diabolical practice of ravaging and destroying lays a dead weight." While might is a dominant factor, it is not the determinant factor. Physical force itself is controlled by the supremacy of the mind. "Conformity to the rules of warfare is a test of national ideals." In the Russo-Japanese War, Japan attached professors of international jurisprudence and diplomats to the headquarters staff in the field, to advise the General commanding on the legality of his actions.

The English Peasant and the War. Arthur Pott. Pp. 670-3. The lack of trade organisation amongst country workers has been supposed to weaken the sense of fellowship and so to retard the development of patriotism; but the author contends that recent experience shows that a great majority of these people will submit to any sacrifice or discipline when they understand it is for the general weal. The countryman is slow to move, but he does move—the slowness, the author submits, is that of expression rather than that of feeling or conviction. He is reluctant to express himself or advertise his feelings. A recruiting meeting in Herefordshire resulted in two recruits coming forward, but within a short period thirty more had enlisted, many without announcing their intention. The author claims that though the cost of living has been high and the rewards of labour low, there has been no strike or labour unrest among agricultural people since the War began, such as those which have occurred amongst much better-paid workers in other fields of industry.

Imperial Studies. Sir C. P. Lucas, K.C.B. Pp. 665-9. "Imperial Studies" have been defined as "a specialised study of the past and present conditions that govern the life and development of the communities under the British Crown, together with the study of cognate problems." The study of Imperial interest, which originated through a suggestion made by Mr. Sidney Low, has now been taken up by the University of

London, and the Senate has appointed an Imperial Studies Committee, on which are to be found men representing India and the Overseas Dominions. Lectures already given have mainly had a bearing on the present War, such as "The Spirit of the Allied Nations," and "The International Crisis in its Ethical and Psychological Aspects." The outcome of research will doubtless lead to a wider and better asserted knowledge of things which concern our Empire.

FOREIGN.

LA REVUE ANTHROPOLOGIQUE, July-August, 1915. *La cruauté allemande est-elle ethnique?* Pierre G. Mahondeau.

M. Mahondeau considers the ethnic types of which the German nation is composed. He concludes that the population is so mixed that such a term as the Germanic Race is only meaningless. The bulk of the South Germans are of the broad-headed Alpine Race; while according to M. Mahondeau the Prussians are largely Nordic in origin. To ascribe the brutality of German methods to their Nordic blood would be contrary to what we know of the temperament of the peoples of Scandinavia, whilst the brachycephals, we are told, are far from being characterised by a ferocious and bloody temperament. M. Mahondeau appears to abandon the ethnic hypothesis, in favour of the view that, among the modern Germans national pride has reached the point of madness, and that we must consider them as a nation in a pathological state.

THE TRAINING SCHOOL BULLETIN, June, 1915. Vol. xii., No. 4. *The Annual Report of the President* (pp. 91-95) states that the Department of Research includes the study of the feeble-minded from every angle, social, economic, scientific; the investigation of heredity; the study of the daily life of each child; the growth and development, physically as well as mentally; the keeping of an accurate clinical history of each child, and the tabulation and interpretation of the data found. The Extension Department includes the collection of facts, data and information concerning the feeble-minded from every possible source, giving this freely whenever it is needed and will be used.

The Annual Report of the Superintendent (pp. 96-100) states that the method of grading is such that if an inmate has a mentality of eight years he or she is placed with a group mentally eight years old, no matter what the actual age is.

The Examination of 1,097 Children in the Public Schools of Cleveland, Ohio. By Charlotte Steinbach, Examiner of Backward Children. Pp. 101-106. Children having a mentality ranging from eight to ten years, or thereabouts, are termed "morons," and the author remarks that children of this class generally appear like normal children, sometimes being very attractive, and it is difficult to recognise their actual mental defectiveness unless a careful study has been made of the subject. The difficulty with which they perform their tasks causes them to become a dead weight on the school system. As soon as these pupils have been examined, recommendation is made to the district superintendent that they be placed in special classes. The imbeciles show very limited ability to respond to training; the morons, on the contrary, can be very highly trained along industrial lines. The author strongly advocates the segregation of morons owing to their incapacity for holding their own in competition with normal people. The moron girl beyond school age presents one of the most serious problems—one-third of the unmarried mothers being of mentality below par. The author believes that if the schools properly cared for the feeble-minded the truancy departments would be diminished 50 per cent.

The Size of the Special Classes. By Henry H. Goddard, Ph.D. Pp. 106-7. The author remarks that it seems to have been generally accepted that the "special classes" for defective children in the public schools should not number more than 15 pupils. It is almost certain that if the number of these children in a class were to be raised to 20 or 25, not only would many teachers who now think of going into the work be discouraged from doing so, but many who are already engaged would relinquish it. It would be better even if the number were 12 or 10. The great function of the teacher of defective children is to impress upon their sluggish nervous systems certain habits of reaction which are essential to their life and happiness. Such habitual reactions can only be insured if the teacher is able to devote sufficient time to each individual to make it certain that the pupil does not break the habit before it is formed.

A Study of 150 *Delinquent Boys.* By J. Harold Williams. Pp. 108-9. In a review of this article, which appeared in Bulletin No. 1 of the Research Laboratory of the Buckel Foundation, E. A. Doll remarks that the author made an unusually thorough examination of each case, using the Stanford Revision and Extension of the B-S scale (not yet published), which has been standardised for average normal children and youths up to 18 years of age. The median chronological age of the boys examined was 16.5, with limits of 10.5 and 21 years. As a result of the mental tests the median mental age of the group was 12.5. Classified by grades of intelligence, 28 per cent. were definitely feeble-minded (intellectual capacity will never exceed 12 years), 25 per cent. were border-line (mental level about 12 years), 22 per cent. were "dull normal," and 25 per cent. were normal or above normal. The group contained whites, negroes and Indian-Mexicans, and it was found that the percentage of mental defect varied with race, showing 6 per cent. of the whites feeble-minded, 48 per cent. of the negroes, and 60 per cent. of the Indian-Mexicans.

Relation of Delinquency and Criminality to Mental Deficiency. By J. Harold Williams and Lewis M. Terman. Pp. 109-110. In this paper, which forms part of the "Biennial Report of the Whittier State School, Psychological Survey, Part III.," the authors, who have gathered together the result of investigations, state that the great majority of reliable researches show that at least one-quarter, and probably one-third, of the delinquents are mentally defective, and that the defect is the chief cause of the delinquency. The authors deal with the results of studies made both in Europe and in America. In answer to the question "Why do the feeble-minded tend to become delinquent?" they state that true morality depends upon the ability to foresee consequences and upon the willingness or capacity to exercise self-restraint. Criminals of normal intelligence possess the former capacity, but not the latter; the feeble-minded possess neither. Moral judgment is a function of intelligence and demands a power of constructive imagination and abstract thinking which the feeble-minded possess only in a limited degree. The authors call attention to the evidence of heredity in showing the relation of delinquency to mental defect, citing the Kallikak Family, the Hill Folk, the Nam Family, the Jukes, etc.

THE JOURNAL OF SOCIOLOGIC MEDICINE, June, 1915. Vol. xvi., No. 3. *Rules and Regulations in Operating Plants.* By J. B. Lowman, M.D. Pp. 139-150. This paper deals with the question of hygienic and sanitary conditions in works, special attention being given to the examination of employees by a medical expert, and to their instruction in proper methods of living and care of themselves and families. No employee who is suffering from bronchial, skin or venereal disease should be allowed to work with other men. Persons with deformities or organic diseases must be employed in positions where there is no danger.

Health Measures affecting Factory Employees. By J. E. Tuckerman, M.D. Pp. 151-159. The author remarks that laws regulating the health conditions of factory employees were first directed against accidents, but accidents are responsible for only a part of the morbidity and mortality incident to industrial occupations, six-sevenths of the preventable deaths being due to various diseases and poisons. Laws prescribing health and sanitary conditions for employees are, the author asserts, essentially matters for experts. The views of the legislator and the sociologist should be tempered by medical advice. The author remarks that the surgical or medical care of employees is a legitimate element of expense in the cost of production which is becoming widely recognised, and refers to provisions made by the City of Cleveland to bring about progress along *all* social lines, health included. This is the provision of a Division of Publicity and Research (constituted under the Department of Public Welfare). The Commissioner of this division is authorised to provide for the study of, and research in, causes of poverty, delinquency, crime, disease and similar problems of the community, and to promote, by means of lectures, exhibits, and in other ways, the education and understanding of the community in matters connected with public health and welfare.

Happiness as a Factor in Efficiency. By Woods Hutchinson, M.A., M.D. Pp. 160-163. The author considers that the size of his wages is an important factor in promoting the happiness of the individual. We should use our influence to ensure the worker getting enough, above their absolute needs, to be spent in increasing their health and vigour—by rational means of recreation in the rest hours. He thinks that such means of recreation should be part of our municipal system. Instead of the highways and hedges, or the dance hall under objectionable conditions, wholesome provision should be made for allowing young people to meet. He expresses admiration for that institution of Latin civilisation, the great public central plaza which every town has, and to which everybody goes in the evening to walk, talk and dance.

THE JOURNAL OF THE SOCIETY OF SANITARY AND MORAL PROPHYLAXIS, April, 1915. Vol. vi., No. 2. *What a New York City High School has done.* By James E. Peabody. Pp. 45-50. This paper contains the substance of an address delivered by Professor Peabody in July, 1914, before the National Education Association at St. Paul, in which he outlined to superintendents, principals and teachers of biology a series of propositions dealing with sex instruction. These propositions were repeated before other bodies and appeared to meet with general approval. The propositions are outlined under eleven heads. The author considers that it is entirely practicable and wise to present in biological courses the explanation of the reproductive processes of plants and animals, even as high as the birds, boys and girls being able in the majority of cases to apply the facts thus learned. Sex hygiene presents greater difficulty. He mentions that in New York City schools biology is required throughout the first year of the high school, and the committee has aimed at bringing into the foreground the relations of biology to human welfare. The needs and means of imparting further information are discussed at some length.

Constructive Preventive Work through Moral Education. By Dr. Mabel S. Ulrich, Lecturer for the Commission on Social Morality to Normal Schools, Colleges and Universities. Pp. 53-60. As the result of considerable experience and observation, the author believes that the most important part of education in morals lies in education of the pre-adolescent child—that it is desirable to get for a child a real moral backbone by the time of puberty. This greatly simplifies later problems. The child, by the age of 12, should have a clean-cut, simple conception of the biological laws of life, but in such an impersonal way that he

takes it for granted just as he takes anything else in nature for granted. One of the advantages of early biological training is that the child gets a vocabulary. Much of adolescent sex education might well be built around the idea of family. The author discusses several other subjects, such as sex irradiation, morals, and the effects of legislation.

JOURNAL OF HEREDITY, June, 1915. Vol. vi., No. 6. *Pollen Sterility in Grapes.* By M. J. Dorsey, University of Minnesota Agricultural Experimental Station. Pp. 243-249. The fact that a number of varieties of grapes fail to set fruit when pollinated with their own pollen has been observed for some time, especially when large blocks of certain varieties have been grown in more or less isolated positions. This is due to self-sterility, and careful study has shown that the inefficacy of the pollen is owing, in many instances, to the fact that the generative nucleus in each cell has degenerated. To overcome the defects of self-sterility in any variety it is necessary to continue the practice firmly established by some of the earlier workers of mixing varieties in the vineyard. The general question of sterility in plants is at the present time being investigated from a number of standpoints, and some workers, especially Jefferies, have emphasised the relation between aborted pollen and hybridity. A number of cases are recorded where an unequal number of chromosomes are brought into the zygote from each parent. From the heredity standpoint some workers hold that sterility results from the presence of a factor for sterility. In his summary the author remarks (1) Self-sterility in the grape is due to the pollen. (2) All varieties of grapes tested set fruit when potent pollen was used, which shows that the pistils are normal. (3) Certain varieties are more effective as pollenisers than others. (4) When dry, potent pollen can be distinguished from impotent pollen by its shape. (5) Impotent pollen is correlated with the reflexed type of stamen.

Wellesley's Birth-Rate. By Roswell H. Johnson and Bertha Stutzmann, University of Pittsburgh. Pp. 250-253. The authors remark that no question is of greater importance to eugenics than that of the birth-rate among the eugenically superior, and adduce evidence which goes to prove that the reproductivity of college graduates is far from adequate even to replace their own numbers.

The result of the investigation in respect of Wellesley College students is as follows:—

Status in Fall of 1912.	Graduates.	All Students.
Per cent. married (graduated 1879-1888) ...	55%	60%
Per cent. married in 10 years from graduation...	35%	37%
,, ,, 20 ,, ,, ...	48%	49%
Number of children (mothers graduated 1879-1888).		
Per student	.86	.97
,, wife	1.56	1.62

The figures in respect of honours students are:—

Graduates of '01, '02, '03, '04—Status in Fall of 1912.	
Per cent. married	44%
Number of children per graduate...	.37
,, ,, per wife	.87

The authors consider that there are at least three causes for this abnormally low birth-rate—(1) Lack of co-education. (2) Failure of their education to make them desirous of having homes of their own. (3) Excessive limitation of the students' opportunities for social life. They express the opinion that separate colleges for women are, in the United States, an historic blunder, and show that they arose through women being debarred from men's colleges. The article concludes with a strong suggestion for the teaching of domestic science in the broadest sense of the term in all women's colleges.

Dynamic Evolution: A Review. By Raymond Pearl. Pp. 254-6. In this review of Mr. Casper L. Redfield's book Dr. Pearl remarks that the present book is essentially a condensed epitome of the author's earlier writings upon the subject. He considers that the author's theory of inheritance of results of training and use are not supported by adequate biological evidence. There are few pages of the book which do not contain some statement, put in the form of a positive dogmatic assertion, which either has no foundation in fact, because the subject has never been investigated, or is contrary to well-known data in the literation of biology. Instances are given.

Putting over Eugenics. By A. E. Hamilton, Eugenics Record Office, Spring Harbour, New York. Pp. 281. This is an account of an organisation known as "Camp Fire Girls," consisting of girls and women, whose aim is to develop the home spirit and make it dominate the entire community. The ranks are recruited from those who have ability to do and to help rather than from those who need help, and the organisation gives them a training in team work which will enable and incline them to give effective woman's service to the community, by discovering, developing and using social genius, just as previous generations have discovered and used scientific genius. Physical fitness is one of the objects of the association, and canoeing, swimming, cooking are severally indulged in. The highest rank in Camp Fire is that of torch-bearer, whose desire, expressed on receiving the honour, is

"The light that has been given to me
I desire to pass undimmed to others."

Its biological and social significance is made plain to those who work for and win the rank. The organisation is due to Dr. and Mrs. Luther Halsey Gulick, and already numbers about 70,000 members.

THE JOURNAL OF HEREDITY, July, 1915. Vol. vi., No. 7. *The Georgia Velvet Bean.* By John Belling. P. 290. The author remarks that the loss of a genetic factor may occur occasionally in almost any pure line of plants, and that sometimes the results are of agricultural value. Among cases of "mutation" which have been thoroughly investigated, he mentions the occurrence of the "false wild oat" in pure strains of oats, due to the loss of a single genetic factor. The Florida velvet bean (*Stizolobium deeringianum*) has long been grown in Georgia as a soil improver and cattle food, usually from Florida seed, since it often fails to ripen seed farther north. Three years or so ago an earlier strain seems to have been discovered in the Georgia fields and is now extensively grown there. The author shows a photograph of a Florida velvet bean and a Georgia velvet bean taken on the same day (September 19th, 1914). Both were planted on the same day in the same row. The Georgia plants had dropped their leaves and ripened all their pods, being nearly two months in advance of the Florida plants, and as early as the Yokohama bean. From crosses between the Yokohama and the Florida, the author concludes that the Florida has a factor for late flowering, H, which the Yokohama does not possess; and he supposes that the Georgia velvet bean arose from the Florida velvet bean by the "spontaneous" loss of the factor H. Since H is dominant, the early plants would appear only in the second generation.

JOURNAL OF HEREDITY, September, 1915. *Colour in Cocker Spaniels.* By W. M. Barrows and J. Mc I. Phillips. Pp. 387-397. An examination of the results of 89 spaniel matings, which strongly indicate simple Mendelian inheritance. There are two factors giving the system of coat colours—

black	liver
red	lemon

In the discussion of other features, there is a suggestion of a dilution factor, but the inheritance of spots is far from being elucidated. The

authors evidently anticipate a simple Mendelian solution in every case. They state, however, without further reference, that "Selection for larger areas of white or colour has a cumulative effect which affects the ratio of spotted to solid offspring."

Plant Breeding in Canada. W. T. Macown. Pp. 398-406. An interesting account of some of the work of the Dominion experimental farms. It is of great economic importance to obtain apple trees sufficiently hardy to stand the Canadian winter, and for this purpose an extensive series of crosses were made in 1894 with the Siberian crab (*Pyrus baccata*), an exceedingly hardy tree, the fruit of which is about half an inch in diameter and quite astringent. In 1899 many of the crosses bore fruit, and the best of them are said to compare favourably with cultivated crabs in flavour, and yielded fruit from 12 to 14 times as heavy as the mother tree. Some of these are more hardy than existing apples and crabs, but since their fruit is inferior they have been crossed again. The second crosses began to fruit in 1910, and 24 of the varieties which have been obtained have apples of two inches or more in diameter. It remains, however, to be seen whether any of these are sufficiently hardy. Other extensive experiments are briefly alluded to. It is satisfactory to feel that systematic experiments on a large scale are proceeding with a view to the acclimatisation of domestic plants, although it would appear that these particular attempts are just such blindfold gropings as must result when sufficient encouragement is not given to a purely scientific investigation of the facts.

POPULAR SCIENCE MONTHLY, June, 1915. Vol. lxxxvi., No. 6. *The Celibate Women of To-day.* By Earl Barnes. Pp. 550-556. The author remarks that the growth of democratic ideals which has been steadily working among women since 1870, has doubtless had much to do with so many remaining single. Women have ceased to be merely "the sex"; they have become individuals. A woman now seeks fulfilment not only of her personal liking, but for all the qualities of her varied personal life. In these days, when a girl has her own pay envelope, she often finds it difficult to give up a salary which, even if small, is absolutely her own, to accept a feudal relation to some man's salary. The author thinks, however, that it is not so much the amount of the income that really troubles the modern woman as her personal relation to it. Some means should be devised by which a woman could be related to the family income so as to preserve her independence and self-respect. Turning to the other aspect, the author deals with some of the compensation which modern life has to offer to celibate women—the desire for service, which can often be more fully realised in a life of personal freedom than in marriage. Self-realisation through vicarious living is one solution of a celibate life for the individual. For themselves, and for all the higher purposes of civilisation, such lives may have great worth—biologically, they are lost. The author considers that in order to induce more of this class of person to marry we must remodel our mediæval institution of marriage. "It must cease to be a political convenience or a religious sacrament and must become a biological truth. . . . Women must be emancipated socially, as they have been emancipated intellectually and economically; they must be given a larger and more direct share in choosing their life-mates."

Fertilisation and Artificial Parthogenesis of the Egg. By Dr. J. F. McClendon, University of Minnesota, Med. School. Pp. 568-575. Eggs of various animals have been made parthogenetic by putting them in solutions containing salts, acids or alkalies, sugar, fat solvents, blood sera, alkaloids, or by means of asphyxiation, or by mechanical, thermal, or electric changes. The concentration of the solution in which the eggs are treated may be the same as that of the fluid in which they normally live, or it may be of a greater or less concentration. It has been fairly

well demonstrated that the artificial agents used in producing parthogenesis act primarily on the surface of the egg. R. Lillie supposes that they tend to increase its permeability. Loch recognises a "superficial cytolysis," the exact nature of which is unknown. Cytolysis has been considered to consist of, or be accompanied by, an increase in permeability of the protoplasm. There seems to be no doubt that the permeability of the egg is increased by agents producing parthogenesis, but the manner in which the influence is developed is not absolutely decided. If fertilisation alters the permeability of the egg, it may be that the changes in permeability influence the surface tension. Loeb's "improved method of artificial parthogenesis" claims two treatments of eggs to be necessary. They are first to be stimulated to development by use of fatty acid, or some other method, and then exposed to a hyper-tonic solution. The latter he calls a "corrective agent," and supposes that it changes the character of the oxidation in the egg, since he observes no effect on the rate of oxidation in the developing eggs. Dealing with the relation of anæsthesia to the development of the egg, the author remarks that anæsthetics have a depressant action on various cell activities when used in certain concentration. Lillie found that anæsthetics might antagonise the action of the pure salt solution used to cause eggs to develop, presumably preventing the increase in permeability usually caused by the salt solution. It is evident, the author concludes, that the problem of parthogenesis is closely interwoven with fundamental problems of physiology—stimulation, oxidation and anæsthesia, and that the final elucidation of parthogenesis and fertilisation must await the solution of other problems. On the other hand, the systematic study of parthogenesis has already shed much light on general physiology, and progress will be more certain if all these problems be kept before the mind of the investigator.

The Antecedents of the Study of Character and Temperament. By Professor Joseph Jastrow, University of Wisconsin. Pp. 590-613. In his review of the venturesome and ambitious attempts to solve the sources of human nature, which were antecedent to modern psychology, the author remarks that, however completely discredited, they belong to the irrevocable stages of our intellectual heritage, and show how uncertain has been the occupation of the psychological realm. The historical connection between the antecedents and present-day views is irregular; the succession of opinion is largely by replacement and outgrowth. Nevertheless, the points of connection with the body of knowledge which we draw on for the satisfaction of our systematised and rationalised inquiries are frequent. The originators of the doctrine of "temperaments" were empirical psychologists, who observed that differences of mental disposition, like cheerfulness and testiness, were common and conspicuous traits of men. They were also medical practitioners with a fair knowledge of the body and its ills, and recognised that mental dispositions were intimately related to bodily condition. The "spirit" theory of disease has a like basis and purpose; it reaches from primitive medicine to Christian exorcism and beyond. The doctrine of "signatures," in accordance with which red flowers were considered efficacious in the treatment of blood diseases, and yellow ones in the treatment of jaundice, illustrates the force of native analogy. Astrology is the most ambitious of such efforts, both in design and scope of application. Its three persistent motives seem to be the cure of disease, the reading of character, the fore-knowledge of the future. It aims at determining the character as well as the careers of men, predicting their liability to disease and its issues, and prescribing the set of disposition. The complete transformation of physiological conceptions inaugurated by Harvey's discovery of the circulation of the blood (1628) was, in the opinion of the author, one of the most potent influences in substituting verification and observation in the place of authority. It is fortunate, he remarks, that at

the very period at which the older currents of thought, medical and otherwise, were destined to retirement by Harvey's fundamental discovery, they were summarised in Burton's "Anatomy of Melancholy." The principle of "physiogonomy," a doctrine as old as Aristotle, held that mental traits are conditioned by bodily composition. Associated with this doctrine are the names of Cardan, Porta and Lavater. The latter's work supplies a convincing example of the limitations of impressionism as a basis for the study of character and of its utter futility for the purposes of a sound psychology. It illustrates a specific psychological fallacy: that of exaggerating the significance of traits in which we have an interest. The last stage in the antecedents of the study of character, "Phrenology," was founded by Dr. Franz Joseph Gall. In its practical effect and later career it resembles the system of Lavater. The system was extended and popularised by Dr. Johann Caspar Spurzheim, Gall's associate and successor. The author remarks "the fact that phrenology called larger attention to the study of character than had any other movement gives it an important place in a retrospective view." In its alliance with the study of hypnotism, in the career of James Braid, phrenology came in contact with the advances leading to modern psychology. Of "modern psychology" the author says: "The establishment of the principles and the body of knowledge determining the present study of character and temperament is the convergent product of a complex development; it forms an integral part of the general advance for which the 19th century—the culmination setting in with marked acceleration in the second half thereof—is notable." The author follows on with a consideration of the contributory branches of investigation to which psychology is particularly indebted. Bibliographical references are given in some parts of the article.

The Ohio Plan for the Study of Delinquency. By Professor Thomas H. Haines, Bureau of Juvenile Research, Columbus, Ohio. Pp. 576-589. The author refers to the appreciation of the tremendous burden and waste caused by the propagation of "misfits," which has been brought about by the careful study of the problems of human heredity by eugenic workers in the last few years. He describes the reform schools and homes for delinquent minors which have been provided in most States, and the newer Juvenile Court, first provided in Chicago in 1899. He points out the economic importance of making investigations into the causes of delinquency in each individual case, and the application of psychology and sociology to the fullest extent possible. In addition to the handling of the individual delinquent, he considers that a social survey of large bodies of the population should be made, so as to map out the tainted stocks. This view of the problems involved in delinquency led to the establishment of a Bureau of Juvenile Research on July 1st, 1914. The work of the bureau is to study the problems of delinquency from the points of view of the best technology afforded by sociology, psychology and the biologic sciences. It is hoped that the lines of work will result in new visions of the relations of intelligence to the will and emotions—the relation of knowledge to the springs of action and conduct. Also that the investigations will make contributions to pure science. The lines of work undertaken are likely to result in new conceptions and divisions of feeble-mindedness. While society is not ready to demand eugenic marriages, the accumulation of such material as this bureau is making constitutes an intelligent procedure to prepare us to control and to eliminate the propagation of the unfit.

QUARTERLY CHRONICLE.

CENTRAL SOCIETY.

July 1st.—At the Grafton Galleries, 4 p.m., Major Leonard Darwin's Presidential Address on "Eugenics During and After the War." The paper was followed by a discussion. Major and Mrs. Darwin held an "At Home" for members of the Society and their friends.

COMMITTEES.

July 1st.—Executive Council Meeting.
,, ,, —Annual General Meeting.

BRANCHES.

The branches of the Society are not holding meetings during the present session owing to the War.

PUBLICATIONS RECEIVED.

Health for the Middle-Aged, by SEYMOUR TAYLOR, M.D., F.R.C.P. (Publishers: Messrs. Methuen, 36, Essex Street, Strand, London, W.C. Price 1s. net. Pp. 99.)

Militarism versus Feminism: An Enquiry and a Policy demonstrating that Militarism involves the Subjection of Women. (Publishers: George Allen and Unwin, Ruskin House, 40, Museum Street, London, W.C. Price 6d. Pp. 64.)

The Bowmen, and other Legends of the War, by ARTHUR MACHEN. (Publishers: Simpkin, Marshall, Hamilton, Kent and Co., 4, Stationers' Hall Court, London, E.C. Price 1s. Pp. 86.)

The War and After, by SIR OLIVER LODGE, F.R.S. (Publishers: Methuen and Co., 36, Essex Street, London, W.C. Price 1s. net. Pp. 235.)

Emma Darwin: A Century of Family Letters, 1792-1896. Edited by Henrietta Litchfield. (Publisher: John Murray, Albermarle Street, London, W. Price 21s. net. 2 Vols. Pp. 289 and 326.)

Fatigue, by A. MOSSO. Translated by Margaret Drummond, M.A., and W. B. Drummond, M.B., C.M., F.R.C.P.E. (Publishers: George Allen and Unwin, Limited, London; G. P. Putnam's Sons, New York. Price 2s. 6d. net. Pp. 334.)